UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,475	09/28/2006	Yoshiharu Ohta	2691-000058/US	9499

30593 7590 06/08/2009

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 8910
RESTON, VA 20195

EXAMINER	
MARCHESCHI, MICHAEL A	
ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
06/08/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,475	OHTA ET AL.	
	Examiner	Art Unit	
	Michael A. Marcheschi	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,7 and 9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 7 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The new matter added to the claims, literally in claim 1, is the limitation about the number of "coarse particles" because (1) the examiner cannot find literal or clear support for "less than 140,000/0.5 ml". It is to be noted that 140,000 is not literally defined nor is any and all values less than 140,000, as the claim requires, supported. This rejection was previously defined in the non final action.

Claims 1, 2, 7 and 9 are rejected under 35 U.S.C. 103(a) as obvious over Tamai et al. (144) in view of Kaufman et al. (382).

Tamai et al. teach in the abstract, column 3, lines 12-45, column 5, line 64-column 6, line 27, column 8, lines 33-35 and the claims, a polishing composition comprising 10+ weight percent fumed silica. The fumed silica has a bulk density of at least 70 g/l. The reference also teaches a method of making the fumed silica polishing composition (acidic substance with basic substance). It is to be noted that column 3, lines 28-31 teaches that in the polishing composition, the silica has a size such that not more than 500,000 per 0.1 ml is larger than 0.5 micron.

The primary reference teaches all of the claimed limitations with the exception of the claimed additives, however, it is the examiners position that the skilled artisan would have appreciated and thus found it obvious to add any one of the claimed additives to the composition according to the primary reference because these additives are conventionally known to be added to polishing compositions depending on the polishing characteristics sought and this aspect would have been well within the scope of the skilled artisan with predicable results.

With respect to the process limitations (i.e., mixing an alkali aqueous solution with an acidic solution, as is apparent from the claims), the reference clearly teaches these, however, assuming arguendo, applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

As outlined above, column 3, lines 28-31 clearly teaches the newly added limitation regarding the size.

Assuming arguendo about the limitations “alkali solution” and “acidic solution’, it is to be noted that the primary reference uses both an acid and a base in the composition, and although not designated as both being “solutions”, this is immaterial because the composition will still contain an acid, base and water, irrespective of the acid and base being initially in solution or not and thus burden is shifted to applicants to establish why the reference fails to reads on the above limitations nor the final polishing composition.

Claims 1, 2, 7 and 9 are rejected under 35 U.S.C. 103(a) as obvious over Pasqualoni et al. (770) in view of Tamai et al. (144).

Pasqualoni et al. teach in sections 0013, 0018, 0029, 0020, 0034 and 0036-0039, a polishing composition comprising 10 weight percent fumed silica (i.e. is to be noted that this is a preferred amount), an oxidizer, an acidic component, a basic component (i.e. ammonium hydroxide) and other components. The size of the coarse particles is defined in section 0013.

This reference is silent as to the bulk density of the fumed silica and the processing conditions used to make the slurry.

With respect to the bulk density, this is obvious motivated by the fact that the secondary reference teaches in column 6, lines 7-23 beneficial reasons to make a polishing composition by using fumed silica with the claimed bulk density.

With respect to the added limitation of the number of coarse particles, it is to be noted that the primary reference teaches in section 0013 size criteria for coarse particles which reads on the claimed size because overlapping ranges are held to be obvious.

With respect to the process limitations (i.e., mixing an alkali aqueous solution with an acidic solution, as is apparent from the claims, the reference clearly teaches these, however, assuming arguendo, applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

Assuming arguendo about the limitations “alkali solution” and “acidic solution’, it is to be noted that the primary reference uses both an acid and a base in the composition, and although not designated as both being “solutions”, this is immaterial because the composition will still contain an acid, base and water, irrespective of the acid and base being initially in solution or not

and thus burden is shifted to applicants to establish why the reference fails to reads on the above limitations nor the final polishing composition

Claims 1, 2, 7 and 9 are rejected under 35 U.S.C. 103(a) as obvious over either (1) Tamai et al. (144) in view of Kaufman et al. (382) or (2) Kaufman et al. (382) in view of Tamai et al. (144) both in view of Pasqualoni et al.

Tamai et al. (144) in view of Kaufman et al. (382) and Pasqualoni et al..

Tamai et al. teach all of the claimed limitations with the exception of (1) the claimed additives and (2) the coarse particles limitation. However, with respect to (1), it is the examiners position that the skilled artisan would have appreciated and thus found it obvious to add any one of the claimed additives to the composition according to the primary reference because these additives are conventionally known to be added to polishing compositions depending on the polishing characteristics sought, as clearly disclosed by both of the secondary references and this aspect would have been well within the scope of the skilled artisan with predicable results.

With respect to (2), it is the examiners position that one skilled in the art would have appreciated and thus it obvious to manufacture a polishing composition having coarse particles within the claimed range because Pasqualoni et al. teaches in section 0013 beneficial reasons for eliminating such coarse particles and the beneficial reasons provide the clear motivation for the above combination. It is to be noted that this reference teaching in section 0013 reads on the claimed size because overlapping ranges are held to be obvious.

With respect to the process limitations (i.e., mixing an alkali aqueous solution with an acidic solution, as is apparent from the claims, the reference clearly teaches these, however,

assuming arguendo, applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

Assuming arguendo about the limitations "alkali solution" and "acidic solution', it is to be noted that the primary reference uses both an acid and a base in the composition, and although not designated as both being "solutions", this is immaterial because the composition will still contain an acid, base and water, irrespective of the acid and base being initially in solution or not and thus burden is shifted to applicants to establish why the reference fails to reads on the above limitations nor the final polishing composition.

Kaufman et al. (382) in view of Tamai et al. (144) and Pasqualoni et al.

Kaufman et al. teach in the claims, a polishing composition comprising 15 weight percent fumed silica, an oxidizer, a complexing agent (acidic component) and other components (i.e. ammonium hydroxide (basic component).

This reference is silent as to (1) the bulk density of the fumed silica and the processing conditions used to make the slurry and (2) the coarse particles limitation.

With respect to (1), this is obvious motivated by the fact that Tamai et al. teaches in column 6, lines 7-23 beneficial reasons to make a polishing composition by using fumed silica with the claimed bulk density.

With respect to (2), it is the examiners position that one skilled in the art would have appreciated and thus it obvious to manufacture a polishing composition having coarse particles within the claimed range because Pasqualoni et al. teaches in section 0013 beneficial reasons for eliminating such coarse particles and the beneficial reasons provide the clear motivation for the

above combination. It is to be noted that this reference teaching in section 0013 reads on the claimed size because overlapping ranges are held to be obvious.

With respect to the process limitations (i.e., mixing an alkali aqueous solution with an acidic solution, as is apparent from the claims, the reference clearly teaches these, however, assuming arguendo, applicants use process limitations to define the product and "product-by-process" claims do not patentably distinguish the product even though made by a different process. *In re Thorpe* 227 USPQ 964.

Assuming arguendo about the limitations "alkali solution" and "acidic solution', it is to be noted that the primary reference uses both an acid and a base in the composition, and although not designated as both being "solutions", this is immaterial because the composition will still contain an acid, base and water, irrespective of the acid and base being initially in solution or not and thus burden is shifted to applicants to establish why the reference fails to reads on the above limitations nor the final polishing composition.

Applicant's arguments filed 2/23/09 have been fully considered but they are not persuasive.

With respect to applicants arguments against the rejection of claims 1, 2, 7 and 9 under first paragraph of 35 U.S.C. 112, applicants argue that table 1 discloses embodiments having less than 140,000 particles/0.5 ml. This is acknowledged, however, the embodiments, at most, would discloses that the number of coarse particles can range between 66,595 particles/0.5 ml. to 112,453 particles/0.5 ml. and not "no more than 140,000 particles/0./5 ml.". Where is the value of 140,000 particles/0.5 ml. disclosed and where is it stated that the number of particles can be

present in any and all amounts less than 140,000 particles/0.5 ml.? The interpretation of "no more than" implies that the number of particles/0.5 ml. can be any and all values less than 140,000 particles/0.5 ml., such as for example, 1 particle/0.5 ml., however, when describing the number of particles, an amount of 66,595 particles/0.5 ml. is the only lowest value disclosed for the claimed invention. In view of this, how is the claimed limitation supported by the specification? The same is true for the upper limit claimed (140,000 particles/0./5 ml.) because when describing the number of particles, an amount of 112,453 particles/0.5 ml. is the only highest value disclosed for the claimed invention. In view of this, how is the claimed limitation supported by the specification? The specification must provide clear support for subject matter added by any amendment (amendment of 10/20/08) and applicants have not established that such support for the claimed number of coarse particles (no more than 140,000 particles/0./5 ml.) is clearly defined in the specification, especially since the claimed upper and lower limits (i.e. "no more than" reads on any and all values below the defined upper limit) are not disclosed anywhere in the specification.

Applicants make a statement that the "in spite of the Examiner's agreement during the interview conducted on 9/16/08... amendment would distinguish over the art of record, the claims are again rejected over a number of the same references." To fully respond to this statement made by applicants, it was never agreed that inserting the number of coarse particles would overcome the references of record. During the interview, it was never stated by the examiner that if this amendment was made, the rejections would be withdrawn. It would appear that a miscommunication is apparent. It is to be noted that the interview summary set forth a "possibility of adding the limitations to the amount of coarse particles, as defined in the

specification" (see interview summary substance defined on the interview summary form) but never stated that such an amendment would overcome the prior art of record. As a further note to the interview summary, applicants did not insert the number of coarse particles as per the specification disclosure because the specification only discloses between 66,595 particles/0.5 ml. to 112,453 particles/0.5 ml. and not "no more than 140,000 particles/0./5 ml." as is claimed.

Before responding to applicants arguments against the art rejections, it is to be noted that the claims can be given the broadest reasonable interpretation. The number of coarse particles having a size of 0.5 microns is defined as being no more than 140,000 (particles)/0.5 ml. As can be seen, the phrase " no more than 140,000/0.5 ml " reads on any and all value below 140,000/0.5 ml. such as 0.1, 0.2…1, 2, 3, 4, 5, 6, etc.

Arguments with respect to the rejection of claims 1, 2, 7 and 9 as being obvious over Tamai et al. (144) in view of Kaufman et al. (382).

Applicants argue that Tamai discloses in column 3, lines 28-32 that the fumed silica contains not more than 500,000/0.1 ml of agglomerates not smaller than 0.5 microns (i.e. not more than 2,500,000/0.5 ml of agglomerates not smaller than 0.5 microns, when calculated in terms of a 0.5 ml sample) and they further state that "the number of particles not smaller than 0.5 microns (<0.5 microns) is 2,500,000/0.5 ml. and this is not less than 140,000 particles/0.5 ml. Applicants argument are not persuasive for 2 reasons:

(1) not smaller than 0.5 microns reads on greater than or equal to 0.5 microns, thus clearly reading on the claimed coarse particle size of 0.5 microns, and

(2) the number of particles of this size is not limited to a definitive value of 2,500,000/0.5 ml., as argued but values not more than 2,500,000/0.5 ml and this clearly would include any and all values below this value of 2,500,000/0.5 ml, including the claimed value 140,000/0.5 ml. and below.

In view of the above, the claimed coarse particle limitation is met by the reference and it is to be noted that no evidence of criticality has been shown to establish unexpected results.

Applicants also argue this reference in relation to the teachings in table 1. This table is acknowledged, however, it is well established that a reference can be used for all it realistically teaches and is not limited to only the preferred embodiments (i.e. the table data can be considered the preferred embodiments).

Applicants argue on page 7 of the response that the office admitted that Tamai fails to disclose or suggest at least one of the claimed additives and argue that "it is never appropriate to rely solely on common knowledge without evidentiary support" and cites *In re Zurko* and MPEP 2144.03.

It would appear that applicants are dismissing the fact that an evidentiary supporting document was used in the rejection and such supporting document is the Kaufman et al. reference (claims rejected over Tamai et al. (144) in view of Kaufman et al. (382)). The *In re Zurko* case and MPEP 2144.03 refers to "Reliance on Common Knowledge in the Art or "Well Known" Prior Art (i.e. official notice). The examiner never made any official notice statement but rather provided a supporting document (i.e. Kaufman et al.) to establish that the addition of at least one of the claimed additives would be obvious because these additives are conventionally known to be added to polishing compositions depending on the polishing characteristics sought

and this aspect would have been well within the scope of the skilled artisan with predicable results.

This reference clearly teaches reasons why one would include conventional additives in polishing compositions (i.e. see sections [0009], [0026] and [0028]-[0033]) depending on the polishing characteristics sought (and the substrate to be polished). The examiner has thus clearly established a prima facie case of obviousness by using the teaching of Kaufman to establish evidence that the addition of additives to polishing compositions is well within the scope of the skilled artisan and applicants have not show any clear reasons why one would never add any type of additive to a polishing composition.

Applicants also state that because "Kaufman is not applied in the rejection of the claims, Kaufman is not discussed with this rejection". The examiner is unclear as to this statement because the rejection is defined as "Tamai et al. (144) in view of Kaufman et al. (382), thus contrary to applicants position, Kaufman is applied in this rejection.

Arguments with respect to the rejection of claims 1, 2, 7 and 9 as being obvious over Kaufman et al. (382) in view of Tamai et al. (144).

Applicants arguments against this rejection are persuasive because the instant claims positively recite that coarse particles must be present in the defined amount and Kaufman et al. (382) fails to appreciate this (see page 8, last paragraph and first full paragraph on page 9 of applicants response). In view of this, this rejection based on Kaufman et al. (382) in view of Tamai et al. (144), only, is withdrawn.

Arguments with respect to the rejection of claims 1, 2, 7 and 9 as being obvious over Pasqualoni et al. (770) in view of Tamai et al. (144).

Applicants argue that Pasqualoni discloses that the abrasive (fumed silica) contains less than about 150,000 particles/30 microliters having a size of greater than 0.5 microns (i.e. less than 2,500,000/0.5 ml having a size of greater than 0.5 microns, when calculated in terms of a 0.5 ml sample) and they further state that "the number of particles thus is 2,500,000/0.5 ml. and this is not less than 140,000 particles/0.5 ml. Applicants argument are not persuasive for 2 reasons:

(1) the reference clearly teaches that the size is greater than "about" 0.5 microns and the term "about" in this teaching reads on 0.5 microns, thus clearly reading on the claimed coarse particle size of 0.5 microns, and

(2) the number of particles of this size is not limited to a definitive value of 2,500,000/0.5 ml., as argued but values less than 2,500,000/0.5 ml and this clearly would include any and all values below this value of 2,500,000/0.5 ml, including the claimed value 140,000/0.5 ml. and below.

In view of the above, the claimed coarse particle limitation is met by the reference and it is to be noted that no evidence of criticality has been shown to establish unexpected results.

With respect to the arguments against Tami used in this rejection, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In addition, contrary to applicants

position this reference does disclose a coarse particle content that reads on the claimed limitation (see above).

Arguments with respect to the rejection of claims 1, 2, 7 and 9 as being obvious over either (1) Tamai et al. (144) in view of Kaufman et al. (382) or (2) Kaufman et al. (382) in view of Tamai et al. (144) both in view of Pasqualoni et al.

All that applicants argue is that Tamai, Kaufman and Pasqualoni fail disclose the claimed coarse particle content. This is not persuasive because, for the reasons above, both Tamai and Pasqualoni do disclose a coarse particle content that encompasses on the claimed limitation. The reasons have been clearly outlined above.

As can be seen from the above rejection of Tamai et al. (144) in view of Kaufman et al. (382) and Pasqualoni et al., (it is to be noted that this rejection was defined as an *alternative rejection* to Tamai et al. (144) in view of Kaufman et al. (382) as defined in the pervious office action and further defined above for completeness), a prima facie obviousness determination has been established to show that the claimed coarse particle content would be obvious in Tamai as has been established by Pasqualoni. It is to be noted that applicants have not clearly presented any arguments against this specific combination, as outlined, thus no further comment is necessary.

As can be seen from the above rejection of Kaufman et al. (382) in view of Tamai et al. (144) and Pasqualoni et al., a prima facie obviousness determination has been established to show that the claimed coarse particle content would be obvious in Kaufman as has been

established by Pasqualoni. It is to be noted that applicants have not clearly presented any arguments against this specific combination, as outlined, thus no further comment is necessary.

It is to be noted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In summary, both Tamai and Pasqualoni do disclose a coarse particle content that encompasses the claimed limitation and since applicants have not provided any evidence of criticality to support unexpected results, the rejections above stand.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Michael A Marcheschi/
Primary Examiner, Art Unit 1793